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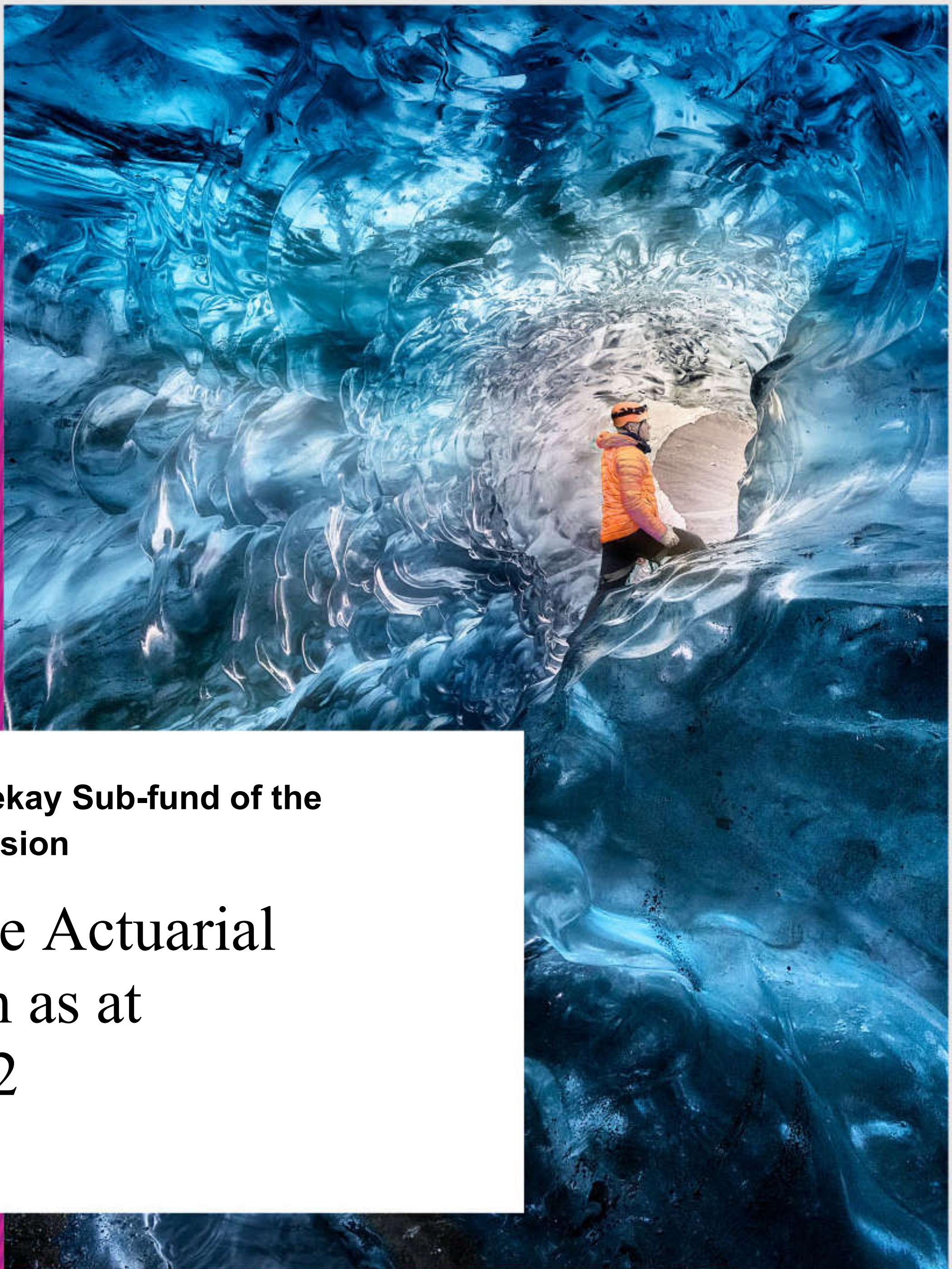

Maritime Super, Teekay Sub-fund of the Maritime Super Division

Report on the Actuarial Investigation as at 30 June 2022

wtwco.com

6 December 2022

Summary

I am pleased to present my report to the Trustee of Maritime Super on the actuarial investigation into the Maritime Super, Teekay Sub-fund of the Maritime Super Division as at 30 June 2022.

This Summary sets out the key results and recommendations contained in this report.

Summary of Data

The assets of the Sub-fund are invested with 80% in the Fund's Balanced option and 20% in the Fund's Cash option through the Hostplus Pooled Superannuation Trust. At the date of this report, the assets of the Sub-fund are in the Fund's Cash option as a short-term risk mitigation strategy.

A summary of membership numbers and the value of net assets of the Sub-fund at 30 June 2022 and 30 June 2020 are shown below:

Measure	30 June 2022	30 June 2020
Number of Members (Pensioners)	11	11
Value of Net Assets	$14,500,000	$13,891,000

Solvency

The financial position of the Sub-fund has improved over the intervaluation period, as shown in the increased Vested Benefits Index from 101.2% as at 30 June 2020 to 122.7% as at 30 June 2022.

The solvency measures as at 30 June 2022 and 30 June 2020 are also shown below:

Measure	30 June 2022	30 June 2020
VBI	122.7%	101.2%
PVABI	122.7%	101.2%

Funding

Taking into account the projected financial position of the Sub-fund over the next three years, I do not consider that additional contributions are currently required.

Contents

Throughout this report the following terms are used:

Fund
Maritime Super

Sub-fund
Maritime Super, Teekay Sub-fund of the Maritime Super Division

Trustee
Maritime Super Pty Ltd, the Trustee of Maritime Super

Employer
Teekay Shipping (Australia)

Trust Deed or Rules
The Sub-fund's Trust Deed dated 1 March 2009 and subsequent amendments

The Investigation Date or Valuation Date
30 June 2022

I continue to recommend that the Employer contribute at the required amounts to meet any Superannuation Guarantee, contractual or any other obligations in respect of accumulation liabilities in the Sub-fund.

Other Matters involving Actuarial Oversight

I further recommend that:

- The Trustee to retain the shortfall limit of 100% based on the current membership of the Sub-fund;
- The Trustee monitor the financial position of the Sub-fund quarterly throughout the following investigation period, with results reviewed by the Actuary; and
- The Trustee obtain a letter from the Actuary in the intervening years between regular actuarial investigations which reports to the Trustee on the vested benefit position of the Sub-fund.

The next actuarial investigation of the Sub-fund should be conducted with an effective date no later than 30 June 2024 based on the APRA determination dated 13 April 2015. Without this determination actuarial investigations would otherwise be required on an annual basis.

The recommended employer contribution rates will be reviewed at that time or at an earlier date if considered appropriate as a consequence of the regular review of the VBI or as required by legislation.

I am not aware of any event since 30 June 2022 that warrants review of the recommendations in this report.

Chris Porter
Fellow of the Institute of Actuaries of Australia

6 December 2022

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Section 1: Introduction

Scope

This investigation has been prepared effective 30 June 2022 for Maritime Super Pty Ltd, Trustee of Maritime Super by the actuary to the Fund, Chris Porter, FIAA.

The Trust Deed governing the Fund requires an actuarial investigation and report to be due at least every three years. Under subparagraph 14(d) of Prudential Standard SPS 160 Defined Benefit Matters, APRA has determined that the Trustee require regular actuarial investigations of the Fund to be made every two years.

The main aims of the investigation are to examine the current financial position of the Sub-fund and the long-term funding of the Sub-fund's benefits, and to provide advice to the Trustee on the contribution rate at which the Employer should contribute and on any other matters the actuary considers relevant.

This investigation is primarily interested in the defined benefit liabilities of the Sub-fund, and unless otherwise specified, this report relates only to such defined benefit liabilities. The Defined Contribution liabilities of the Sub-fund, including those that relate to defined benefit members, are fully funded and do not impact upon the Defined Benefit liabilities. No investigation is required regarding the Defined Contribution liabilities, although in my recommendations I have continued to recommend that the Employer contribute to meet any Superannuation Guarantee, contractual or any other obligations in respect of such liabilities.

This report has been prepared in accordance with Professional Standard 400, dated March 2021, issued by the Institute of Actuaries of Australia.

Background

The Fund is governed by a Trust Deed which was consolidated as at 1 March 2009 and subsequent amendments. The Fund is a complying superannuation fund for the purposes of the Superannuation Industry (Supervision) Act (SIS Act) and for taxation purposes.

Effective 30 June 2022 there are no active members remaining in the Sub-fund. Therefore, the only remaining members of the Sub-fund are those currently in receipt of a lifetime pension.

The Sub-fund is closed to new members.

Contributions

The level of Employer contributions is to be agreed by the Trustee and the Employer acting on the advice of the Actuary. This power is set out in Clause 4.1 of Schedule 4 of the Trust Deed which states:

> *"Subject to Statutory Requirements, each Employer will contribute in respect of Members employed by it on such basis as is agreed between the Trustee and the Employer from time to time and, if necessary or appropriate, after obtaining the advice of the Actuary, provided that:*

a. *contributions will be made at such times and in such manner as the Trustee and the Employer agree; and*

b. *the Employers shall, to the extent necessary after taking into account the financial state of the relevant part of the Plan and having regard to the advice and investigations of the Actuary, make such contributions as are required from time to time to provide the benefits payable in respect of Members under this Schedule 4."*

If the Employer fails to pay any contributions required by the Trustee, then the Trustee may vary the benefits payable to members.

Previous Actuarial Investigation

The previous actuarial investigation of the Sub-fund was carried out by Chris Porter, FIAA as at 30 June 2020, with the results of that investigation set out in a report dated 10 December 2020.

The report concluded that the Sub-fund was not in an unsatisfactory financial position (as defined by SIS legislation) at that date and recommended that no additional contributions were required.

Experience since 30 June 2022

Since 30 June 2022 the net return on the Sub-fund's assets to 30 September 2022 was approximately -0.5%.

The actual experience since 30 June 2022 has deteriorated the financial position of the Sub-fund. Because of this, I have taken into account experience since 30 June 2022 when carrying out the projection of the financial position of the Sub-fund from that date.

It is my understanding that the Fund is currently in the process of implementing a Successor Fund Transfer (SFT) to Hostplus Superanuation Fund, with an intended transfer date in 2023. I consider that the recommendations set out in this report remain appropriate with consideration to the Hostplus SFT, however, without a new determination from APRA it is my opinion that actuarial reviews would be required on an annual basis following the SFT.

Additionally, I understand that the Trustee in consultation with the Employer, is currently investigating the viability of various de-risking options. As a risk-mitigation strategy I have provided separate advice to move the assets of the Sub-fund to 100% Cash, which has been implemented at the date of this report. The recommendations in this report consider the long-term position of the Sub-fund and do not reflect these short-term measures.

Subsequent to the provision of 30 June 2022 membership data, the Fund has undertaken a full review of membership including beneficiary spouse details. We have not updated the valuation for these changes as they are not material to the valuation results, nor do they change the recommendations set out in this report.

Limitations

This report is provided subject to the terms set out herein and in our service agreement dated 24 July 2009 and signed on 3 August 2009, which was originally made with Russell Employee Benefits Pty Ltd and novated in March 2017 to Towers Watson Australia Pty Ltd. This report is provided solely for the Trustee's use and for the specific purposes indicated above. It may not be suitable for use in any other context or for any other purpose.

Except where we expressly agree in writing, this report should not be disclosed or provided to any third party, other than as provided below. In the absence of such consent and an express assumption of responsibility, no responsibility whatsoever is accepted by us for any consequences arising from any third party relying on this report or any advice relating to its contents.

We consent to the Trustee making a copy of this report available on the Fund's website where required in accordance with the relevant legislation.

The Trustee may make a copy of this report available to its auditors, the Employer and to any person to whom the Trustee may be required to provide a copy under relevant legislation, but we make no representation as to the suitability of this report for any purpose other than that for which it was originally provided and accept no responsibility or liability to the Trustee's auditors the Employer or any third party in this regard. The Trustee should draw the provisions of this paragraph to the attention of its auditors and the Employer when passing this report to them.

In preparing this valuation, we have relied upon information and data provided to us orally and in writing by the Trustee and other persons or organisations designated by the Trustee. We have relied on all the data and information provided, including Fund and Sub-fund provisions, membership data and asset information, as being complete and accurate. We have not independently verified the accuracy or completeness of the data or information provided, but we have performed limited checks for consistency. The data and information we have relied upon is shown in the "Additional Information" section of this report.

In my opinion, all calculations are in accordance with requirements of applicable legislative requirements, and the procedures followed and the results presented conform to applicable actuarial standards of practice.

Section 2: Solvency

Solvency Measures

When assessing the adequacy of the assets and future contribution rates, both the long-term and short-term solvency positions should be considered. To assess the solvency position, I have considered the following funding solvency measures[1]:

- Vested Benefits Index (VBI), the ratio of assets to the vested benefits, which represent the total amount which the Sub-fund would be required to pay if all members were to voluntarily leave service (or are payable for benefits in the form of lifetime pension or deferred benefits) on the investigation date; and
- The Present Value of Accrued Benefits Index (PVABI), the ratio of assets to the present value of accrued benefits, which represents the value in today's dollars, of expected future benefits payable based on membership completed to the valuation date.

The following table shows the above indices as at the valuation date, as well as the prior valuation date.

	As at 30 June 2022			As at 30 June 2020		
Measure	Value of Liability	Value of Assets	Index	Value of Liability	Value of Assets	Index
VBI	$11,817,000	$14,500,000	122.7%	$13,725,000	$13,891,000	101.2%
PVABI	$11,817,000	$14,500,000	122.7%	$13,725,000	$13,891,000	101.2%

The indices have increased from those at the previous investigation date. This is primarily a result of changes in the financial assumptions adopted in the valuation, as well as positive experience of the Sub-fund since 30 June 2020, in particular, better than expected investment performance.

The VBI and PVABI have increased by 13.2% as a result of assumptions changes in isolation, which was compounded by gains due to experience over the intervaluation period.

The VBI is above 100% as at the valuation date, and as such, the Sub-fund is to be treated as being in a satisfactory financial position as at that date.

Minimum Requisite Benefits Index

As the Sub-fund no longer includes any active defined benefit members it is my opinion that the Minimum Requisite Benefit Index is equal to 1 under regulation 9.15(2) (ii) of the Superannuation Industry (Supervision) Regulations 1994 and the Sub-fund is not technically insolvent as at 30 June 2022.

[1] As the Sub-fund is comprised of only lifetime pensioners in payments, the liabilities valued under each solvency measure are identical.

Discretionary or Contingent Benefits

The Sub-fund has not historically paid any material discretionary benefits, so I have not analysed the impact of such discretionary benefits. There are no other material contingent benefits offered by the Sub-fund.

Termination Benefits

Under the Trust Deed, on termination of the Fund, and by implication the Sub-fund, the assets of the Sub-fund must be used in the following order and the Fund must then be wound up:

a. In the payment or provision of accrued benefits in respect of Members who have accumulation accounts;

b. In the payment or provision of the actuarial reserve to members, less any amount already paid under (a) above;

c. In the payment and / or transfer of any residual assets among Employers.

Should the remaining assets of the Sub-fund be insufficient to provide for the benefits in a. or b., then the remaining assets shall be applied rateably amongst entitled members under a. or b., as applicable.

In the event of the termination of the Sub-fund, the Trustee must determine if it is obliged to secure pensions by purchasing annuities from a life insurance company or by some other arrangement.

Further, upon termination, it could become necessary to liquidate existing assets. Given the assets of the Fund are invested in Hostplus Pooled Superannuation Trust investment options, I do not expect there would be any liquidity issues if it became necessary to quickly realise funds to meet any termination payments. I have therefore not allowed for any discount on assets to reflect the quick sale of assets in the event of termination.

To broadly illustrate the Sub-fund's ability to pay benefits upon termination, I have estimated the cost of purchasing an annuity to secure the pension liability by valuing the pension liability using a discount rate that reflects the yield available on Australian high quality corporate bonds, plus a 10% loading on the liability value to make broad allowance for any administration expenses and profit margins included in the premiums charged by an insurer as well as additional expenses associated with the transfer of liabilities. I note that it is difficult to estimate the true cost of annuity contracts without seeking market quotes from an insurer.

The following table shows the estimated remaining assets available in this scenario.

	Coverage for Lifetime Pensioners
Net Assets backing defined benefits at 30 June 2022	$14,500,000
Less: Assets required to secure pension liabilities	$14,162,000
Surplus / (Deficit) of assets	$338,000

I expect the Sub-fund to be able to secure contracts to pay lifetime pensions at the current level in the event that the Sub-fund is terminated.

If the Sub-fund was ever terminated, the Trustee would need to seek both actuarial and legal advice at that time to consider the method of determining and payment form of benefits from the Sub-fund.

I note that under the Trust Deed on wind-up of the Sub-fund, the Trustee has the power to reduce the amounts payable to pensioners, however, given the ongoing commitment of the Employer to support the benefits of former Employees I do not recommend that this course of action be pursued at this time.

Ability to Pay Pensions

SPS 160 requires the Sub-fund's actuary to certify whether there is a high degree of probability to pay pensions as required by the Trust Deed.

Professional Standard 410, issued by the Institute of Actuaries of Australia further specifies that a probability of at least 70% should be represented as a high degree of probability for this purpose.

I have simulated the Sub-fund's projected financial position over the remaining lifetime of the Sub-fund, allowing for actual returns experienced since 30 June 2022 (as allowed under Professional Standard 410), and estimate a probability of 78% that the Sub-fund can pay all future expected pension payments for the remaining lifetimes of the current pensioner members, including reversion pensions.

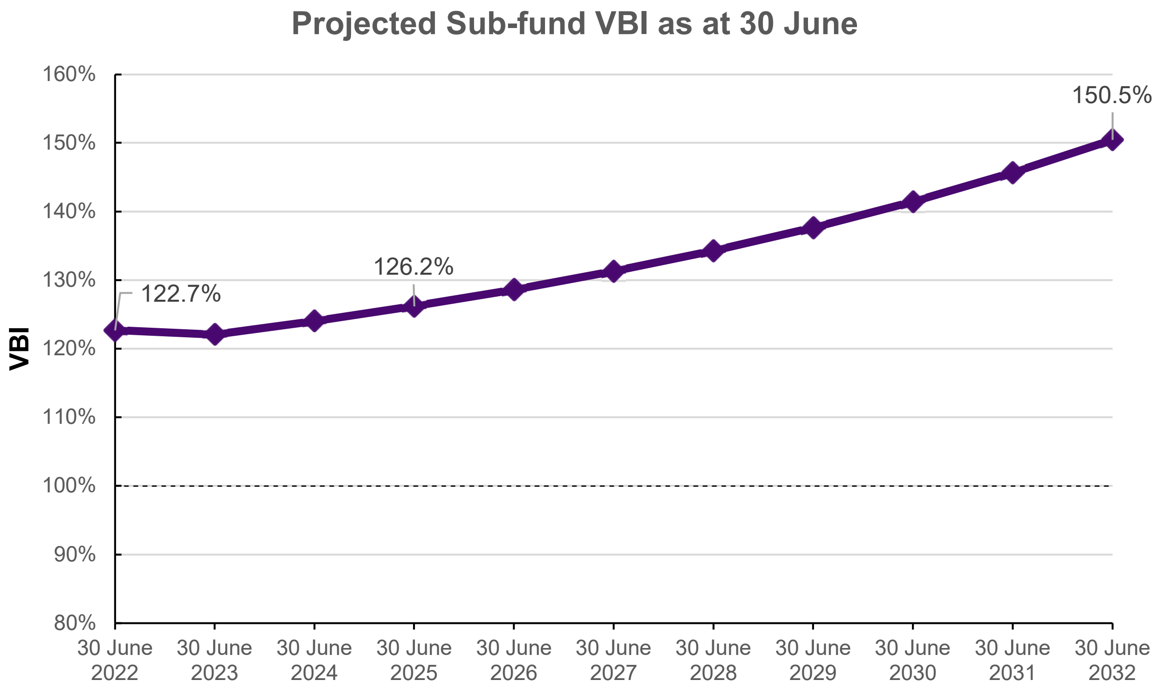
I am therefore able to certify that there is a high degree of probabiltiy to pay pensions at their current levels.

Section 3: Funding

This section considers the long-term funding of the Sub-fund and assesses the contributions required in order to fund benefits payable in future years. To determine the long-term contribution rates, I have used the Projected Benefit funding method as described in the "Additional Information" section of this report.

Vested Benefit Projection

The Trustee has a solvency target to maintain a satisfactory financial position for the pension liabilities, which is a VBI of 100%. In order to assess whether a contribution program is required to meet this target, I have projected the Sub-fund's Vested Benefits Index over the next ten years based on no additional Employer contributions and allowing for actual investment experience to 30 September 2022.

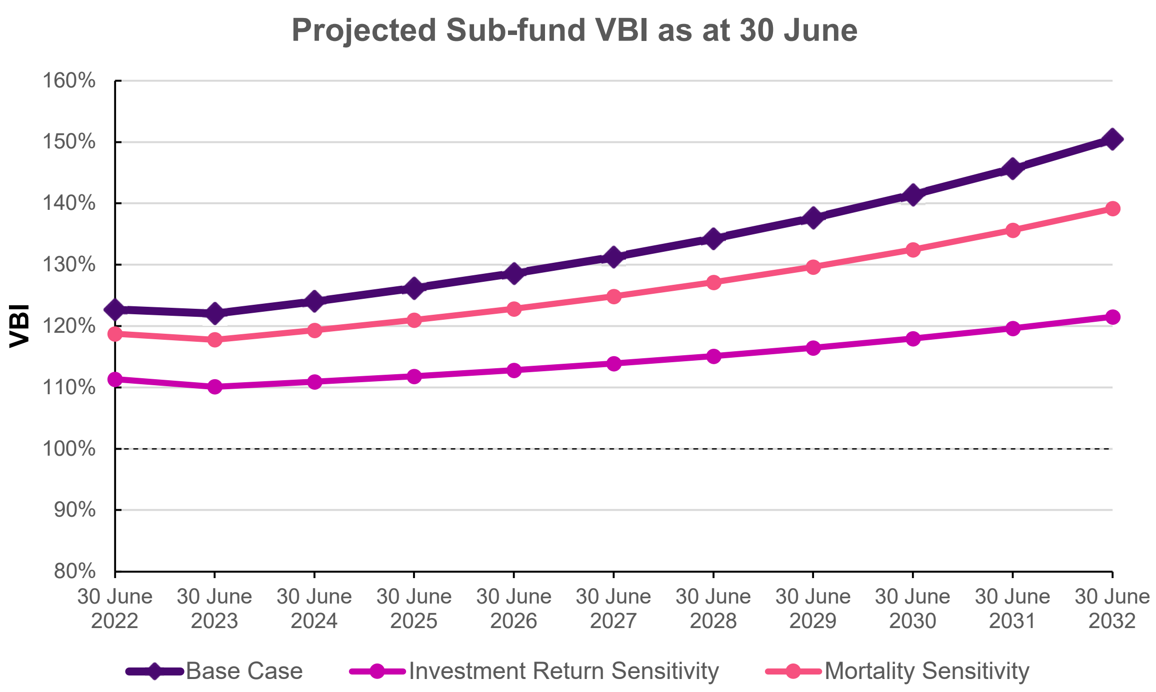


Sensitivity Analysis

It is also useful to consider the sensitivity of the analysis above to reasonable variations in the valuation assumptions. The following table shows the VBI if key assumptions had been varied as described below:

	This Valuation Basis	Scenario 1	Scenario 2
Description	**Base Case**	**Investment Return Sensitivity**	**Mortality Sensitivity**
Discount Rate	6.4%	5.4%	6.4%
Mortality Basis	85% ALT2015-17	85% ALT2015-17	70% ALT2015-17
Future Mortality Improvements	2% p.a. from 1 July 2016	2% p.a. from 1 July 2016	2% p.a. from 1 July 2016
Vested Benefits Index	122.7%	111.3%	118.7%

Similarly, the Sub-fund's projected VBI over the next three years under the varied assumptions, and with no additional Employer contributions are shown in the graph below:



These results show that the Sub-fund's projected financial position is sensitive to long-term actuarial assumptions. While the sensitivities have been selected to be illustrative of reasonable changes in the valuation assumptions, they do not represent the upper or lower bounds of possible outcomes and more extreme outcomes are possible.

Summary

On the basis of the above results, and having regard to the Company's preferences as well as the long-term target objective of the Trustee to maintain a satisfactory financial position for the pension liabilities, I consider that no additional Employer contributions are required to meet the funding requirements of the Sub-fund at the current time.

I continue to recommend that the Employer contribute at the required amounts to meet any Superannuation Guarantee, contractual or any other obligations in respect of accumulation liabilities in the Sub-fund.

I further recommend that the VBI position continue to be monitored quarterly throughout the following investigation period, with the results reviewed by the Actuary, to ensure that these contribution recommendations remain appropriate. I also recommend that the Trustee obtain a letter from the Actuary in the intervening years between regular actuarial investigations which reports to the Trustee on the vested benefit position of the Sub-fund.

Section 4: Other Matters Involving Actuarial Oversight

Investments

The net market value of assets is based on the asset values declared by the respective external fund managers at 30 June 2022 which in turn are based on the market values of the assets after allowing for realisation costs.

I note that Professional Standard 404 defines the 'Fair Value' of assets as the value of assets before the deduction of transaction costs. Based on the type of assets held by the Fund I do not expect realisation costs to be material. I have therefore used the net market value of assets for the purpose of this investigation.

Investment Strategy

The assets of the Sub-fund are invested with 80% in the Balanced option and 20% in the Cash option through the Hostplus Pooled Superannuation Trust. At the date of this report, the assets of the Sub-fund are in the Fund's Cash option as a short-term risk-mitigation strategy.

The return objective of the Balanced option is to outperform the annual rate of inflation (CPI) by 3.0% p.a. on average over 10-year periods, and by 4.0% p.a. on average over 20-year periods. The return objective of the Cash option is to outperform the annual rate of inflation (CPI) by -0.5% p.a. on average over 20-year periods.

The Balanced option is a diversified portfolio, including some growth assets and some lower risk investments.

The Cash option provides security of capital but returns will typically be lower than that produced by the Balanced option over the medium to long term.

The strategic asset allocation of the Balanced and Cash options, as well as the combined 80% Balanced, 20% Cash portfolio as at 30 June 2022 is shown in the below table:

Asset Class	Balanced	Cash	Sub-fund Portfolio
Australian Shares	21%	0%	17%
International Shares	29%	0%	23%
Property	11%	0%	9%
Private Equity	10%	0%	8%
Infrastructure	11%	0%	9%
Credit	7%	0%	6%
Alternatives	3%	0%	2%
Diversified Fixed Interest	3%	0%	2%
Cash	5%	100%	24%
Total Growth Assets	**76%**	**0%**	**61%**
Total Defensive Assets	**24%**	**100%**	**39%**

In the funding of defined benefit liabilities, a trade-off exists between the level of investment risk and the certainty of future Employer contributions (or the certainty of no future contributions, as is the case for the Sub-fund).

An investment strategy with a higher allocation to growth assets, and thus higher expected future returns, results in a lower measure of present value of pension liabilities and requires a lower level of assets to remain in a satisfactory financial position.

However, a higher allocation to growth assets can also be expected to result in greater volatility of investment returns, as a result establishing a greater buffer of assets in excess of vested benefits is preferable to reduce the likelihood that periods of negative returns cause the Sub-fund to fall into an unsatisfactory financial position.

Having considered the relatively young age (and therefore the long investment term) of lifetime pensioners in the Sub-fund, in my opinion an investment strategy as described above is suitable for a Sub-fund of this type having regard to its financial position, the underlying liabilities and the capacity of the respective employers to meet any funding shortfall.

As the average age of lifetime pensioners increases over time, the Trustee may wish to consider reducing the allocation to growth assets held by the Sub-fund in order to reduce volatility and thereby improve the likelihood of being able to meet the pension payments as they fall due. However, this would result in a lower expected return on assets in the future and therefore would need the support of the sponsoring Employer.

Unit Pricing and Investment Reserving Policy

The assets backing the Sub-fund's liabilities are not subject to member investment choice and the net rate of return on assets does not impact the benefits of members of the Sub-fund.

Investment reserves are not held as there is no smoothing of investment earnings in the setting of unit prices. This remains appropriate.

Liquidity

I understand that the Fund's 80% Balanced, 20% Cash option mix currently targets an illiquid allocation of 34% of assets. As at 30 June 2022, the value of the Sub-fund's defined benefit assets represents less than 1% of the total assets held by the Fund, and an immaterial proportion of the total assets under management by the Hostplus Pooled Superannuation Trust. As such, in my opinion the Fund has sufficient liquidity to meet payments from regular cashflows.

Shortfall Limit

The Trustee currently has an approved shortfall limit of 100%.

Based on the Sub-fund's benefit design and the target allocation described above, in my opinion the 100% shortfall limit remains reasonable for the Sub-fund.

Insurance

As there are no active members, the Sub-fund has no insurance arrangements with respect to the Defined Benefits Division.

Section 5: Additional Information

Risks

The table below summarises the main risks to the financial position of the Sub-fund.

Risk	Approach taken to risk
Investment returns on the existing assets could be insufficient to meet the Trustee's funding objectives	The Trustee takes advice from the Fund Actuary on possible assumptions for future investment returns. In setting the future contributions, the Fund Actuary considers the effect on the future financial position if investment returns are less than expected. The Trustee is able to agree further contributions with the Employer at subsequent valuations if future returns prove insufficient.
Falls in asset values might not be matched by similar falls in the value of the Sub-fund's liabilities	The Trustee considers this risk when determining the Sub-fund's investment strategy. It consults with the Employer in order to understand the Employer's appetite for bearing this risk and takes advice on the Employer's ability to make good any shortfall that may arise. To the extent that such falls in asset values result in deficits at future valuations, the Employer would be required to agree a recovery plan with the Trustee to restore full funding over a period of time.
Liquid assets are not sufficient to meet cashflow requirements of the Sub-fund when they fall due	The assets of the Fund are invested in the Hostplus Pooled Superannuation Trust. As such, the total assets under management are sufficient to cover any potential cashflows of the Sub-fund.
Sub-fund members live longer than assumed	The Trustee adopted mortality assumptions that it regards as prudent estimates of the life expectancy of members so that higher reserves are targeted in respect of the risk than are expected to be necessary.
Legislative changes could lead to increases in the Sub-fund's liabilities	The Trustee takes legal and actuarial advice on changes in legislation and consults with the Employer, where relevant.

Economic risk | Demographic risk | Legal risk

Benefits summary

There are no active members remaining in the Sub-fund as at 30 June 2022.

There are lifetime pensioners in the Sub-fund, who receive monthly pension payments from the Sub-fund over their lifetime.

Death of a Pensioner

If a pensioner dies, a reversionary pension may be payable to their spouse or children. The total amount of the pension payable depends on the number of recipients, and is calculated as:

Pension payable prior to Death x %, where % is calculated as:

Number of Recipients	
1	50%
2	66 2/3%
3	83 1/3%
4 or more	100%

A lump sum of 50% of the pension is also payable to the pensioner's spouse.

Pensions payable to a child

A pension is payable to a child while under the age of 18 years or, in the opinion of the Trustee, a full-time student and remains engaged in a course of study at a school or tertiary institution.

Residual Benefit

Where all pension payments are complete (i.e. where the member and any dependants are deceased or no longer eligible for payment), a residual lump is payable, if positive, calculated as:

Lump sum at retirement, less the cumulative total of all pension payments made to the member and the member's dependants.

Pension Increases

Lifetime pensions paid to former members of the Sub-fund are non-indexed.

The Trustee has the discretion to increase the pension payable to a dependent child once a year by the lesser of the increase in the Consumer Price Index over the preceding year and 5%.

Summary of Data Used in this Investigation

Membership Data

Maritime Super has responsibility for maintaining member records, payment of benefits and other administrative tasks of the Sub-fund.

Maritime Super provided data in respect of members of the Sub-fund as at 30 June 2022, including members who had left the Sub-fund since the last investigation date.

I have checked a sample of the membership data for internal consistency and am satisfied as to the accuracy of this sample.

The following table shows a summary of the membership as at 30 June 2022 and 30 June 2012:

	30 June 2022	30 June 2020
	Pensioners	**Pensioners**
Number of Members	11	11
Average Age	69.7	67.7
Total Pensions	$971,000	$971,000
Average Pension	$88,000	$88,000

Assets Data

We have been provided with audited accounts for the Fund as at 30 June 2022. The accounts were audited by Ernst & Young.

In addition to the Fund’s accounts, I have also been provided with a breakdown of the Fund’s assets into each of the Fund’s various Sub-Funds which I understand has been subject to audit review. I have relied on this breakdown in determining the net asset relating to defined benefits in the Sub-fund.

The net assets exclude any amount held to meet the Operational Risk Financial Requirement.

I am satisfied that there are no material data discrepancies and that the data provided is suitable for the purpose of this investigation. I have relied on the information provided for the purposes of this investigation. Although I have no reason to doubt the quality of asset information provided, the results of this investigation are dependent on the quality of the asset information. Any changes to the asset values above will have an impact on the outcome of the investigation and any resulting recommendations.

Funding Method, Assumptions and Experience

Funding Method

In this valuation, I have determined the level of employer contributions required by projecting members' expected future benefits, and the expected level of future value of assets on the basis of selected assumptions, and compared its levels against relevant funding objectives. If the funding objectives are not expected to be achieved, alternative employer contributions were determined in order to achieve the funding objectives.

This funding method is suitable for this valuation, in particular, given that there are no longer any active members in the Sub-fund.

In producing my recommendations, I have also taken into account the pace of funding required to maintain certain short term solvency measures, in particular, that legislation requires the VBI to be above 100%.

This is consistent with the method used in the previous investigation. In my view this method remains appropriate.

Assumptions

In order to determine the value of expected future benefits and Sub-fund assets, it is necessary to make assumptions regarding the timing and amount of future benefit payments, expenses and contributions. In doing so it is important to examine the experience of the Sub-fund since the last valuation to see whether the previous assumptions have been borne out in practice.

While each of the assumptions used is normally the actuary’s best estimate of future experience, in practice, the actual experience in any (short) period can always be expected to differ from the assumptions to some extent. However, it is intended that over longer periods, they will provide a reasonable estimate of the likely future experience and financial position of the Sub-fund.

In the short-term, as the actual experience emerges differently to the experience implied by the assumptions, the financial position of the Sub-fund will also vary from that expected. However, adjustments to Employer contribution rates, if any, can be made to reflect these differences in the following actuarial investigation.

Financial Assumptions

Valuation assumptions can be broadly divided into demographic assumptions, which relate to characteristics of current and future members of the Sub-fund, and financial assumptions, which are assumptions other than demographic assumptions. The following sections first consider the financial assumptions that are to be adopted for this valuation.

Investment Returns

The rate of return on the Sub-fund's assets (gross of tax and net of investment expenses that are deducted from the investment return) from 30 June 2020 to 30 June 2022 are set out in the table below:

Year Ending	Gross Investment Return[1]
30 June 2021	17.2%
30 June 2022	2.1%
Overall	9.4% p.a.

Over the two-year period to 30 June 2022 the assets held in the Sub-fund returned 9.4% p.a. which is higher than the rate assumed in the previous investigation of 5.3% p.a. In isolation, this has had a positive impact on the financial position of the Sub-fund.

While short-term differences between actual investment return experience and the actuarial assumption can affect the long-term financial position of the Sub-fund as measured by the actuarial investigation, the assumption used in the investigation must be based on long-term expectations since the investigation involves valuing payments in the future.

Based on models of future investment returns developed by WTW, the current expectations of investment returns over the remaining lifetime of the Sub-fund (gross of tax and net of investment management expenses) and the current strategic asset allocation of the Sub-fund is 6.4% p.a. On this basis, I have assumed a long-term investment earning rate of 6.4% p.a. for this investigation, which is higher than the assumed long-term earning rate used for the previous investigation of 5.3% p.a.

Salary Increases

As there are no remaining active defined benefit members in the Sub-fund, no assumptions are required to be made regarding future salary increases.

Pension Increases

The lifetime pensions paid by the Sub-fund are non-indexed.

The Trust Deed allows the Trustee to apply discretionary pension increases to pensions in payment to dependent children. No such pensions are currently in payment and no allowance for future discretionary increases has been made in the valuation.

Administration Expenses and Insurance Costs

For this investigation, I assumed:

- General administration expenses of 0.215% p.a. of assets, in line with the administration expenses levied against all members of the Fund. This is lower than the rate of 0.28% p.a. of assets allowed for in the previous investigation.

[1] Based on the returns of the previous Maritime Super Moderate option from 30 June 2020 to 30 April 2021, and the weighted returns of the Balanced and Cash options thereafter.

- No allowance has been made for insurance premiums as there are no remaining active defined benefit members of the Sub-fund.

The long-term rate of expenses of 0.215% p.a. of net assets in the Sub-fund has been taken into account when calculating the present value of pension liabilities, with the value of future expenses included in liability amounts.

Demographic Assumptions

Rates at which Employee Members Cease Service

Assumptions regarding the rates at which members leave service and the form of the benefits taken are no longer required as there are no remaining active members in the Sub-fund.

Pensioner Mortality

There were no pensioner deaths over the intervaluation period.

As the number of pensioners in the Sub-fund is very small, it is difficult to draw conclusive information from completing a demographic analysis.

For this valuation I have retained the same pensioner mortality assumptions as used in the previous investigation.

The mortality assumptions are based on the mortality studies in respect of the population of Australia. An adjustment to these rates has been applied to reflect that pensioners in the Sub-fund are likely to exhibit lighter mortality rates than the general Australian population. Additionally, allowances have been made for future mortality improvements.

Assumption	30 June 2022	30 June 2020
Base Table	85% of ALT 2015-17	85% of ALT 2015-17
Future Mortality Improvements	2% p.a. from 1 July 2016	2% p.a. from 1 July 2016

Dependant Assumptions

Actual data is collected regarding lifetime pensioners' marital status and spouse date of birth.

No allowance is made for pensions that may be payable to children on the death of a lifetime pensioner.

Statutory Statements Under SPS 160

Maritime Super, Teekay Sub-fund

Actuarial Investigation as at 30 June 2022

The statements required under paragraphs 23(a) to (i) of SPS 160 for interim and regular investigations are set out below:

A. Sub-fund Assets

At 30 June 2022 the net market value of assets of the Sub-fund, excluding any amount held to meet the Operational Risk Financial Requirement (ORFR), was $14,500,000.

B. Projection of Defined Benefit Vested Benefit Index

Based on the actuarial assumptions and the recommended contributions set out in G below, I project that the likely future financial position of the Sub-fund over the three years following the investigation date will be as follows:

Date	Defined Benefit Vested Benefits Index
30 June 2022	122.7%
30 June 2023	122.1%
30 June 2024	124.0%
30 June 2025	126.2%

C. Accrued Benefits

The value of the accrued liabilities of all members as at 30 June 2022 was $11,817,000.

In my opinion, the value of the assets of the Sub-fund at 30 June 2022 was adequate to meet the liabilities in respect of accrued benefits in the Sub-fund (measured as the present value of members' accrued entitlements using the actuarial assumptions).

This assessment has been made using assumptions and a valuation method which I regard as reasonable.

D. Vested Benefits

The value of the vested benefits of all members as at 30 June 2022 was $11,817,000.

In my opinion, the financial position of the Sub-fund is not unsatisfactory and the shortfall limit does not need to be reviewed at this time.

E. Minimum benefits

As the Sub-fund no longer includes any active defined benefit members, it is my opinion (based on legal advice provided to the Trustee dated June 2020) that the Minimum Requisite Benefit Index for the Sub-fund is equal to 1 under regulation 9.15(2) (ii) of the Superannuation Industry (Supervision) Regulations 1994.

F. Funding and Solvency Certificates

Funding and Solvency Certificates applicable to the Sub-fund covering the period from 30 June 2020 to 30 June 2022 required by the Superannuation Industry (Supervision) Act have been provided. In my opinion, I am likely to be able to provide Funding and Solvency Certificates for the Sub-fund covering the period from 30 June 2022 to 30 June 2025.

G. Employer Contributions

The report on the actuarial investigation of the Sub-fund at 30 June 2022 recommends that additional Employer contributions in respect of defined benefit liabilities is not required.

H. Payment of Pensions

In my opinion, at the valuation date, there is a high degree of probability that the Sub-fund will be able to pay the pensions as required under the Sub-fund's governing rules.

I. Pre-July 1998 Funding Credit

No pre-July 1998 funding credits have been granted to the Sub-fund.

Chris Porter
Fellow of the Institute of Actuaries of Australia

6 December 2022

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DO: CR | TR: EC | CR/ER: CJP